NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

LAND RECONSTRUCTION, CURRENTLY MINED LAND

(ac.)
CODE 544

DEFINITION

Restoring currently mined land to an acceptable form and planned use.

PURPOSE

Prevent permanent damage to soil and water resources in and near mined areas.

Restore the productivity of the soils to their pre-mining level.

Reduce erosion and sedimentation.

Maintain or improve the visual quality of the landscape.

CONDITIONS WHERE PRACTICE APPLIES

On areas that are or will be undergoing surface mining operations.

This standard applies to the identification, removal, stockpiling, and replacement of soil materials on currently mined land. It also applies to nearby areas that can be affected by the mining of various minerals or commodities.

CRITERIA

Laws and Regulations. This practice must conform to all federal, state, and local laws and regulations. Laws and regulations of particular concern include those involving water rights, land use, pollution control, property easements, wetlands, preservation of cultural resources, and endangered species. This practice must also comply with laws and regulations relating to mining and reclamation. These include:

Surface Mining Control and Reclamation Act of 1977 (SMCRA), 30 U.S.C. 1201 et seq.

30 CFR 785.17, 816.22, and part 823.

Federal Register/Vol. 64, No. 124, Tuesday, June 29, 1999/Notices, pages 34770-34778.

Site preparation. Clear trees, logs, brush, rubbish, and other undesirable materials as appropriate to install the practice. Areas to be preserved, including those containing trees, vegetation, stream corridors, natural springs, or other important features shall be properly identified.

Additional Criteria to Restore Soil Productivity to Pre-mining Level.

Removal of material for soil reconstruction. A detailed soil survey shall be done on the entire area to be mined. Map prime farmland soils.

All upper soil horizons to be used in reconstructing the soil shall be removed before any surface disturbance except removal of woody plants.

If the area is prime farmland and/or soil productivity is consistent with that needed for post-mining use; the A horizon shall be removed and separately stockpiled. Underlying layers suitable for root development shall be removed and segregated for use as subsoil. Minimum depth of soil to be reconstructed shall be 48 inches or the depth of the subsurface horizon (rooting depth) in the natural soil, whichever is less.

For soils that are not prime farmland, the A horizon shall be removed for use as surface soil on disturbed areas. If the A horizon is less than six inches thick, any unconsolidated material immediately below the A horizon shall be removed and used to obtain six-inch depth if possible.

Soils identified with high electrical conductivity (EC), calcium carbonate, sodium, or other restrictive properties shall be separated and treated if practical.

Removal of overburden material for use as topsoil. Selected overburden material can be substituted for or added to the material in A and B horizons. Before this is done, field observations and/or chemical and physical laboratory analyses must be done to demonstrate that overburden material, or a mixture of overburden and original topsoil, is better suited to restoring capability and productivity than the original A and B horizon material. Analyses shall include pH value; sulfide content; percentage of organic material; nitrogen, phosphorus, and potassium contents; sodium absorption ratio (SAR); electrical conductivity (EC); texture; and available water capacity. Include field trials or greenhouse tests as needed.

This standard must be followed in removing, segregating, and replacing overburden material.

Soil storage. Stockpiles shall be selectively located and protected against wind and water erosion, unnecessary compaction, and contamination by undesirable materials.

Replacement of soil. Prior to topsoil placement, scarify, or otherwise treat regraded areas to reduce slides and promote root penetration.

Replace each topsoil horizon in a position and thickness equivalent to the undisturbed soil. Prevent excess compaction. Replacement soil horizons must support plant growth equivalent to the undisturbed soil horizons.

Nutrients and soil amendments. After topsoil has been spread on disturbed areas, nutrients and soil amendments shall be applied based on a nutrient management plan for the site.

Additional Criteria to Reduce Erosion and Sedimentation

For all post-mining land uses, develop a resource management system that reduces water and/or wind erosion to acceptable levels.

The resource management system shall consider buffer practices, such as filter strips, riparian forest buffers, contour buffer strips, or similar practices that will reduce sediment delivery off site.

Additional Criteria to Maintain or Improve the Visual Quality of the Landscape

The appearance of the reclaimed site must be compatible with the adjacent landscape. Designs shall consider the visual quality of areas of high public visibility.

CONSIDERATIONS

Consider locations for soil storage, access roads, and possible permanent impoundments.

Consider measures for spoil placement, water management, topsoil replacement, restoration of soil productivity, and revegetation.

Reclamation has great potential for increasing or improving wildlife habitat. Avoid monocultures when developing vegetative specifications.

A special concern is the potential for uncovering or redistributing toxic materials from earth moving activities.

Consider cultural resources when planning, installation, and maintenance. This practice may adversely affect cultural resources and should comply with 420, General Manual, Part 401 concerning cultural resources.

PLANS AND SPECIFICATIONS

Plans and specifications for reconstructing currently mined land shall meet this standard and shall include requirements needed to achieve the intended purpose. A reclamation plan must be developed for each site. The plan must specify the required procedures for reclamation.

OPERATION AND MAINTENANCE (O&M)

An O&M plan shall be prepared and discussed with the owner. The plan must provide specific details needed for installed conservation practices. The plan shall specify procedures for:

Filling areas where settlement may adversely affect drainage and land use;

Repairing and revegetating bare spots and eroded areas;

Adding soil nutrients or amendments to soils that cannot support adequate vegetation or replacing unsuitable soils with suitable soil material;

Maintaining access roads and controlling traffic;

Keeping drainage structures and channels clean and functional;

Controlling noxious weeds;

Using proper grazing practices.